

October 11<sup>th</sup>, 2002

To: ES&H Electrical Safety Review

From: Hogan Nguyen

cc: John Krider, Cary Kendziora, Xiangrong Qi

We have constructed 2 small straw drift chambers for CKM. We wish to operate them in an unattended fashion at Lab 3, and later on at the MTest testbeam. Therefore, we would like to schedule an electrical safety review.

The two chambers are currently mounted on a unistrut structure, in a position to look at signals from vertical cosmics. At the testbeam, they will be reoriented to accept horizontal beams.

The chamber gas is currently non-flammable (ArCo<sub>2</sub>), but in the future will contain CF<sub>4</sub>-Isobutane or CF<sub>4</sub>-Ethane. The low voltages (+12, +6, -6) are supplied by a double-width NIM module, which routes power from the NIM crate (see 1<sup>st</sup> enclosed drawing). A large bundy cable (2<sup>nd</sup> enclosed drawing) carries the low voltage to the 2 chambers. The maximum current is ~ 1.5 A, required by the -6 V. The double-width NIM module is fused appropriately. The wire gauges exceed or meet AWG22.

The chambers will operate at an HV not exceeding +2000, drawing a current less than 1 uA. The chamber amplifier/discriminator cards contain fusing. They are mechanically constrained by card guides. The area containing electrical connections to the chambers is covered by sheet metal to improve noise immunity and safety.

Please contact me at 8193 or 266-0178 (pager) at your convenience.

Sincerely,

Hogan

double width

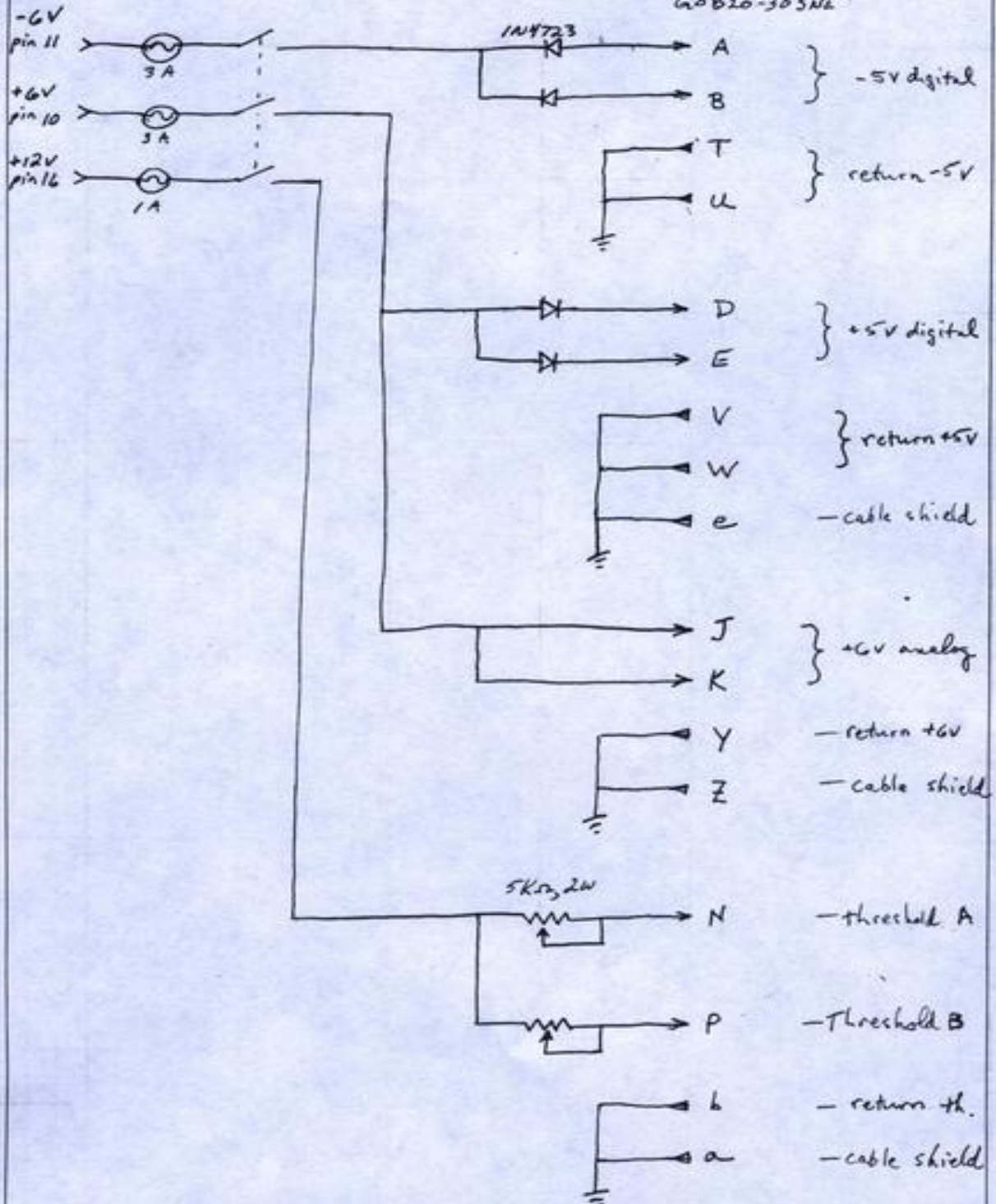
CKM power supply NIM module  
All internal wiring AWG 22 or larger

J. Krider 5/29/02

NIM  
power

Burndy  
Connector

60B20-30SNE



# CKM Straw prototype electronics

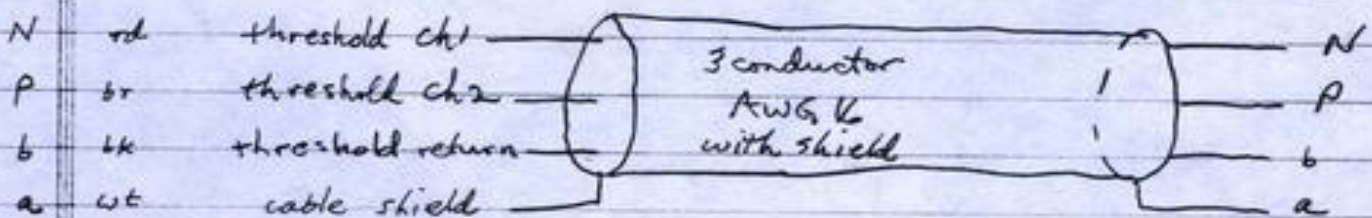
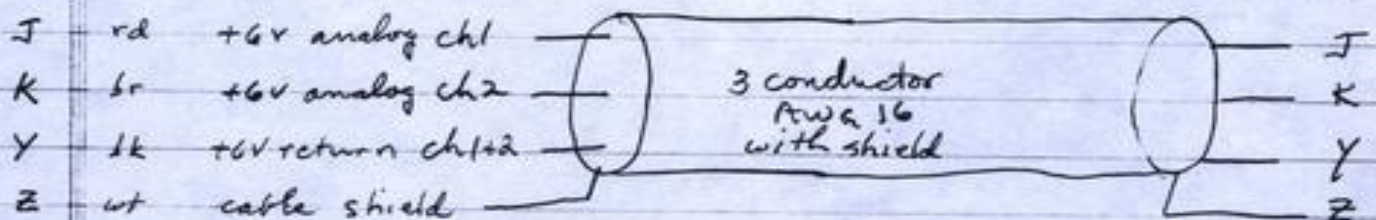
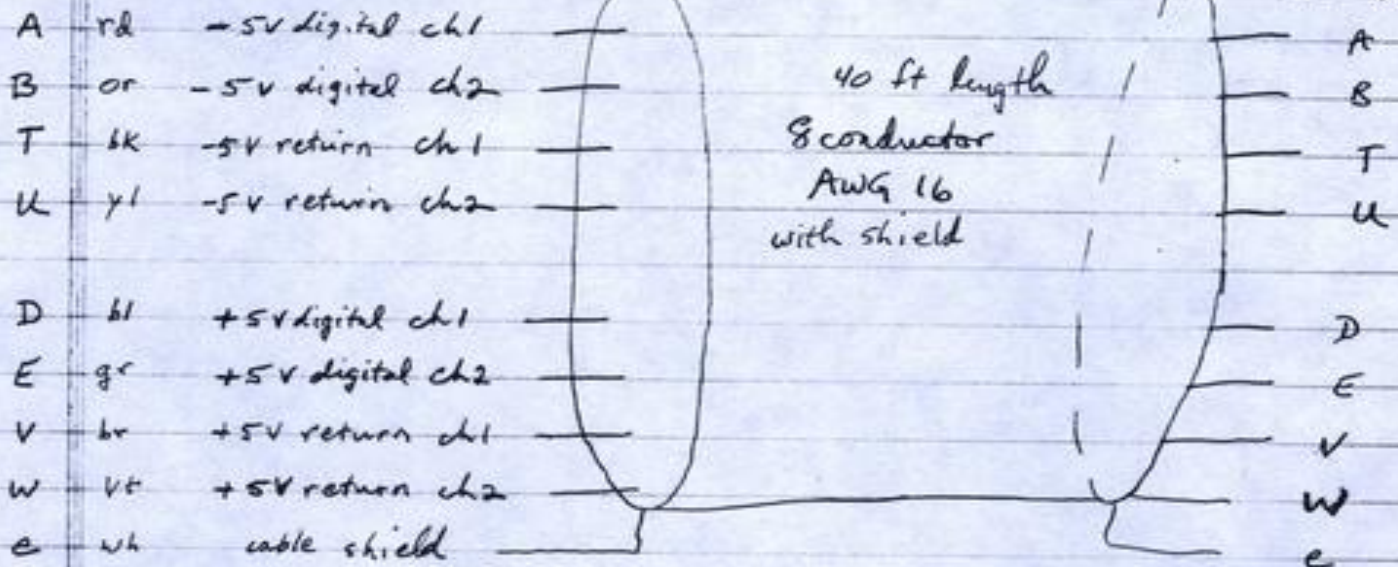
Power cable to chamber 1 (ch1) and chamber 2 (ch2)

40 ft length bundle of 3 cables into single connector

Burndy

GGF20-30PNE

Burndy  
GGF20-30PNE



At chamber end receptacle Burndy G0B20-30PNE the connections to individual chambers are made with individual twisted pairs of AWG 16 wire. Twisted pairs do not exceed 15 inches in length.